# Complexity's Futurescapes

Introduction to the 'Atlas of Social Complexity' project

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# Purpose of critique

- “A critique does not consist in saying that things aren't good the way they are. It consists in seeing on just what type of assumptions, of familiar notions, of established and unexamined ways of thinking the accepted practices are based... To do criticism is to make harder those acts which are now too easy.”
  — Michel Foucault

# Overview

- Setting the context
- Motivation
  - Why a critical cartography?
- Mapping current terrain
  - Twelve challenges facing the study of social complexity
- Next steps
  - Charting new territory

# Setting the context

- Study of social complexity has become an advanced and highly interdisciplinary field
- As it matures, twelve challenges emerge.
- The combination of the field's rapid growth and the challenges present us with a conundrum.

# Conundrum

There is now, more than ever, an abundance of complexity-informed research.

The field is in a muddled and disorganised state (conceptually, methodologically and substantively)

# Motivation

- Conundrum is risky because it invites criticasters to dismiss the complexity sciences as a minority interest and computational toy box for tinkerers.
- Need for clarity and critical assessment
- The Atlas of Social Complexity:
  - Charts the intellectual topography of the challenges
  - Provides a compass for surveying how these challenges are addressed

# What is the study of social complexity?

- Social complexity concerns the application of theories, concepts and methods of *complex systems* to social inquiry – from sociology and political science to economics and globalisation studies
- Social complexity is not the strict domain of social science, including instead scholars from across the academy as well as from those places where these ideas are applied in practice.

# The twelve challenges

- There is no real philosophy of complexity. Therefore, there is no firm rooting of methods or findings. Epistemology and ontology are commonly untouched, particularly amongst scholars from the natural sciences, mathematics and computer science.
- This is problematic given that the complexity sciences emerged, in part, as a challenge to reductionist, modernist science.

# The twelve challenges

- A combination of scientific overreach and the use of complicated language give rise to a mysticism that suggests that the complexity sciences are not just interesting tools but somehow give access to the deepest, most fundamental questions about social life in general.
- This is problematic because such bravado rarely (never) delivers, as such fuelling criticism from other scientists.

# The twelve challenges

- There is so much knowledge in the social sciences not presently part of the formal study of social complexity that there are big gaps in understanding social complexity.
- This is problematic because the complexity sciences claim to over holistic answers to all matters social. Examples of the gaps include proper theories of power, inequality and agency.

# The twelve challenges

- Given the dominance of the natural sciences in the study of social complexity there is a tendency to reinvent the wheel in the face of 150 years of social sciences
- This is problematic because it results in the re-creation of established social science. Examples include the uptake of social contagion theory with little acknowledgement that the theory has existed for at least several decades.

# The twelve challenges

- The jargon of complexity science often leads to confusion when transferred to the social sciences, leading the question whether a complexity concept tells something that could not be told by another concept, i.e. old words vs. new words.
- This is problematic because it often creates jargon-heavy texts, and conflicting definitions of the same terms. Examples include fitness landscapes and self-organization that are understood in many different ways.

# The twelve challenges

- Given the widespread enthusiasm regarding computational modelling and big data, there has been a strong move toward devaluing social theory and theory-driven inquiry: technique in the absence of theory
- This is problematic because social theory is crucial to making sense of data. A recent example was the proliferation of of COVID-19 models that did not utilize or have expertise in the theories on infectious diseases, epidemiology, or human behaviour.

# The twelve challenges

- The complexity sciences appear to ignore the qualitative methods for the study of social complexity, despite the fact there is much going on.
- This is problematic as it devalues an important type of social inquiry, particularly around issues of voice and agency and representation and understanding the nuances of people's lives.

# The twelve challenges

- Complexity sciences are powerful means to learn about global problems. However, many scholars feel the pressure to predict and control systems instead of learning how to manage them: learning tools vs. predictive machines.
- This is problematic because it constitutes a relapse to old ways of predicting notoriously complex social dynamics and prevents learning from those dynamics

# The twelve challenges

- Social sciences have yet to fully engage with big data and computational modelling techniques. Some fields are therefore methodologically outdated relative to the globalised data worlds in which we now all live: the methodological closing of the social scientific mind.
- This is problematic because it allows social science to be ignored by complexity theorists

# The twelve challenges

- Since social theory is largely absent from the complexity sciences, a majority of scholars are preoccupied with finetuning of methods while forgetting the bigger picture: the dire sound of technicalities
- This is problematic because minute technical refinements threaten to replace grand ideas. Many concepts from the complexity canon are two or more decades old.

# The twelve challenges

- Complaints that policy makers, politicians, managers of any kind ‘don’t get complexity’ and fail to follow-up on complexity’s findings signal that some scientists are being tone-deaf about the real world
- This is problematic because the real world of policy and management is as complex as the systems studied. Examples include policy recommendations that link intricate analytical statements to rather simplistic recommendations.

# The twelve challenges

- While scientists may be tone-deaf about the real world, practitioners are equally likely to misunderstand concepts and theories in practice.
- This is problematic because it could discredit ideas by a wider audience and give the impression of complexity as a fad. Examples include the misuse of complex systems thinking in public policy, managerial science, healthcare and public health.


# Where to next?

- The ‘Atlas’ project aims to charter the new territory of scholars and practitioners dealing with the challenges
- Questions:
  - Which thematic directions should we look in to?
  - Which scholars and practitioners should we follow?
  - What are your ideas about the future of the study of social complexity?